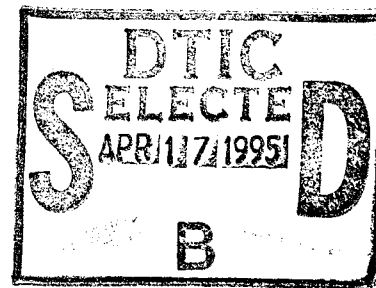


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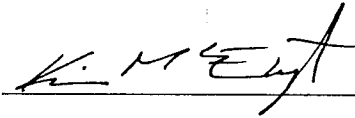
Controlling Chaos in the Deep Battlefield

by

Kim McEligot
Lieutenant Commander, U.S. Navy

A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

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Signature: 

16 June 1995

Paper directed by
Captain David Watson
Chairman, Joint Military Operations Department

Colonel Kenneth S. Kapka
Faculty, Joint Military Operations Department


Faculty Advisor

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Abstract of

BEYOND THE FIRE SUPPORT COORDINATION LINE...
CONTROLLING CHAOS IN THE DEEP BATTLEFIELD

The Deep Battlefield is a complex, ill-defined, shifting area where aggressive application of force is required to capitalize on the constantly changing situation. With the advent of attack helicopters, deep maneuver teams and intermediate range surface to surface missiles, both the U.S. Army and Air Force have means of directly influencing, and the desire to control, the Deep Battlefield. While deconfliction control is best performed by the commander with the preponderance of assets, force application control should be vested in the commander most likely to achieve the Joint Force Commander's desired end state. Delegation is based upon service oriented roles and task organized missions. Of six potential control arrangements, Concurrent-Cooperative Control is the preferred control architecture. It mirrors the multi-role environment and retains operational flexibility but requires improved deconfliction procedures. Realignment battlefield boundaries to reflect the high technology, maneuver warfare environment, extending a tailored version of Near Battlefield control measures and institutionalizing Cooperative Control will assist in correcting chaos in the Deep Battlefield.

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Chaos on the Battlefield

The battle was muddled and confused. Air and ground commanders fought for control.¹ Helicopters were inadvertently targeted during attacks, the corp commander was not permitted to rapidly engage enemy forces within his reach, and aircraft were restricted from attacking deep behind enemy lines.² These are not cases from Vietnam or the distant past, but vignettes from phase IV of Desert Storm. While "The War in the Gulf" may have been an aberration and not representative of future conflicts, it did highlight the U.S. Military's difficulties in employing fast paced, maneuver warfare. Since that time the U.S. Army and Air Force have been arguing over how to eliminate these problems and who should control the Deep Battlefield--the terrain between the Fire Support Coordination Line (FSCL) and the Deep Battle Line (DBL), Figure 1.³ This paper presents an analysis of the Deep Battlefield control requirements, evaluates potential command arrangements and prescribes steps for implementing a preferred control architecture.

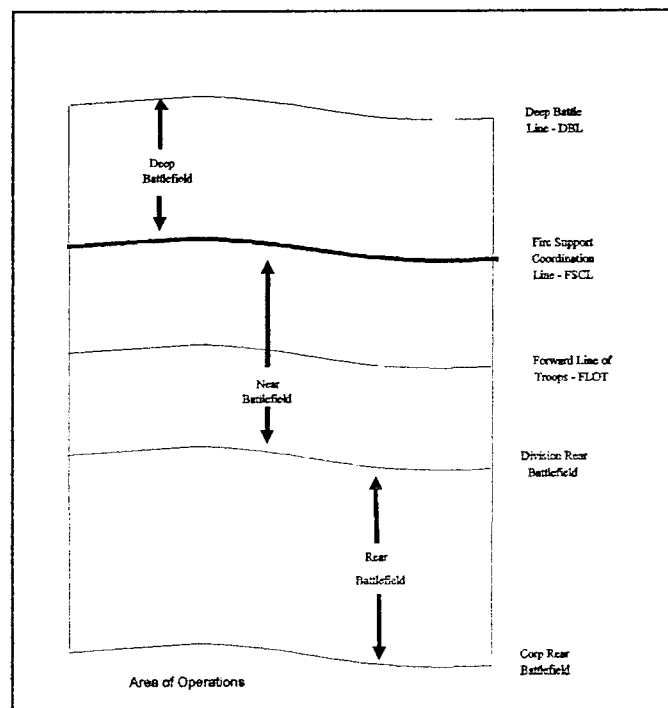


Figure 1
Battlefield Control Boundaries

The Void

Until recently, friendly ground forces were not located within the Deep Battlefield.⁴ The area was treated as a free fire zone and airplanes dropping bombs with impunity against enemy targets.⁵ However, with the advent of modern weapons and tactics (such as attack helicopters, deep maneuver teams, intermediate range surface to surface missiles [SSMs] and maneuver warfare theory) the Deep Battlefield is no longer an exclusion area.⁶ Improved command and control measures are required to ensure unity of effort while protecting friendly forces from each other as well as the enemy.⁷

The Deep Battlefield is a complex, ill-defined, motile area where aggressive application of force is required to capitalize on the constantly changing situation. The boundaries of the Deep Battlefield ebb and flow with the advance and retreat of the Forward Line of Troops (FLOT).⁸ Enemy forces are not bound by the lines demarcating the Near and Deep Battlefield. They must be attacked throughout the entire depth of the combat area. Mobile forces merely pass through the Deep Battlefield enroute to the fight. Opportunities for attacking them are transitive and therefore time critical.

By doctrine the Army has commanded the Deep Battlefield as a part of their overall area of responsibility:

JFCs [Joint Force Commanders] may define areas of operations (AOs) for land and naval forces. AOs...should be large enough for component commanders to accomplish their missions and protect their forces....These commanders employ the full range of joint and Service doctrinal control measures and graphics to delineate responsibilities, deconflict operations, and promote unity of effort.⁹

But until recently the Army has had no means of directly influencing or controlling the area.¹⁰

Meanwhile, the Air Force has developed an organization and procedures to utilize the Deep Battlefield for airfield attack, suppression of enemy air defenses (SEAD), interdiction and other missions. They have filled the Army's command void and have exercised control of the area by default.¹¹ Now the Air Force wants doctrinal control of the Deep Battlefield:

The most reliable way to maximize the enemy's risk is to place the FSCL at the range where artillery and missiles stop being the greatest threat to the enemy and air attack

becomes the greatest threat. All operations beyond the range of observed fires should be under the purview of the JFACC [Joint Force Air Component Commander] when friendly forces aren't maneuvering.¹²

The JFC is responsible for establishing a command and control structure which complements his concept of operations.¹³ As a part of this process he must resolve the fight over the Deep Battlefield, choose a commander, designate what he controls and provide him guidance on objectives in the Deep Battlefield.

Gaining Control

Control of the Deep Battlefield is composed of two parts: deconfliction and force application. Deconfliction permits freedom of action through force security while force application is the cutting edge which coerces the opponent to modify his behavior. Control of both is critical to the attainment of the JFC's goals.

Deconfliction and force application efforts are intertwined, but are not inseparable. While individual elements must be deconflicted from one another and applied against specific targets, they are independent functions and have distinct attributes and control requirements.

Deconfliction is a prerequisite to effective power projection. It inhibits fratricide and eliminates redundancy but will not win a war. Command of deconfliction efforts is logically the responsibility of the commander with the preponderance of forces in the area, and the associated means and knowledge to control these forces.

Control of the force application process is not necessarily numerically determined, but should be vested in the commander most likely to achieve the JFC's desired end state. To assist in control of force application, US forces are task organized through service oriented roles and missions and joint operating procedures.¹⁴ Assigned tasks support attainment of the JFC's objectives and are generally enemy force or capability specific (e.g. neutralize enemy air forces, destroy enemy nuclear weapon production facilities, hold point X-ray from enemy ground attack, etc). In maneuver warfare tasking transcends

terrain (i.e. geographic objectives are only important in relationship to how they effect the employment or capabilities of enemy and friendly forces).¹⁵

The more skillfully force is applied the more beneficial the result. To maximize the probability of success, individual tasks should be delegated to the commander having the greatest interaction with the enemy force. This interaction includes the commander's knowledge of enemy capabilities and employment, and his vulnerability from (and influence on) the enemy forces. Historically, components have been delegated tasks against their enemy's service counterpart (e.g. Air Component Commander [ACC] against enemy air, Ground Component Commander [GCC] against enemy ground, etc).

Unified control of both deconfliction and force application is desirable when the component with the greatest interaction also has the largest force. However, a conflict arises where the influenced component does not have the preponderance of forces. This occurs when the enemy force or a portion of the enemy force is beyond the control of the tasked component. To resolve such cases, the tasked component (or supported component)¹⁶ should retain command of force application efforts while the component with forces available (supporting component) maintains deconfliction control.

An additional control conflict exists between ground and air deconfliction, even though a physical boundary exists between land and sky. Since all ordnance fired into the Deep Battlefield must fly through the air, deconfliction over the battlefield is inescapably linked to ground deconfliction. Ordnance fragmentation patterns and secondary target explosions extend into the airspace of aircraft and cruise missiles and, ground forces are usually inserted into the Deep Battlefield via airlift.

Combining deconfliction and force application control with the air and ground portions of the Deep Battlefield results in a matrix of conflicting control interests. Table I identifies the control requirements a JFC must consider during a military conflict involving concurrent ground and air operations.

Table I.
Control Requirements in the Deep Battlefield

	Deconfliction (Preponderance of Forces)	Force Application (Interaction with Enemy)
Ground	Air Component Command	Ground Component Command
Air	Air Component Command	Air Component Command

The Commander's Dilemma

The JFC must select an organizational scheme for Deep Battlefield control which balancing these divergent interests and supports his concept of operations. Given the dynamic nature of the Deep Battlefield, the JFC's choice of controller can significantly influence the effectiveness of his assigned forces, and potentially even the outcome of the conflict. Several different schemes are possible which maintain unity of command. The JFC may retain command and control functions, establish a specific operational control agency (i.e. a Joint Targeting Board), or delegate command and control to either the ACC or GCC.¹⁷

Centralized control of the Deep Battlefield at the joint command level (figure 2) ensures joint integration and maximizes pre-planned synchronization, but at the expense of timeliness, agility and flexibility. Elevating tactical control to this level will increase the number of control layers in the fire support request, approval and execution process. Additionally, the time expended in approving a request will be increased because the joint force staff is not organized or manned to sort, analyze and react to tactical information.¹⁸ This effort will also divert the commander and staff's time, and attention, away from their primary task of operational and strategic planning. JFC control would work for organizations with a truncated command structure, however beyond small scale operations, direct control becomes impractical. In these instances, the JFC should limit his command of the Deep Battlefield to guidance and prioritization while refraining from tactical planning and execution. Tactical involvement

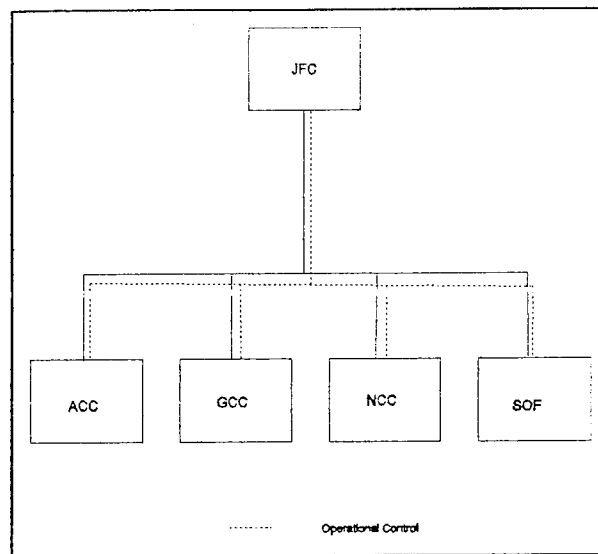


Figure 2
Joint Force Commander Control of the
Deep Battlefield

should be limited to clarifying his intentions when their interpretation varies between component commanders.

Delegating control to a JTB frees the JFC from involvement in tactical details while minimizing the chain of command from the operational commander to the tactical decision maker (figure 3). It retains the joint perspective of the Deep Battlefield and assists in integrating forces, but many of the problems encountered in JFC control are still present. Expanding the command structure to incorporate

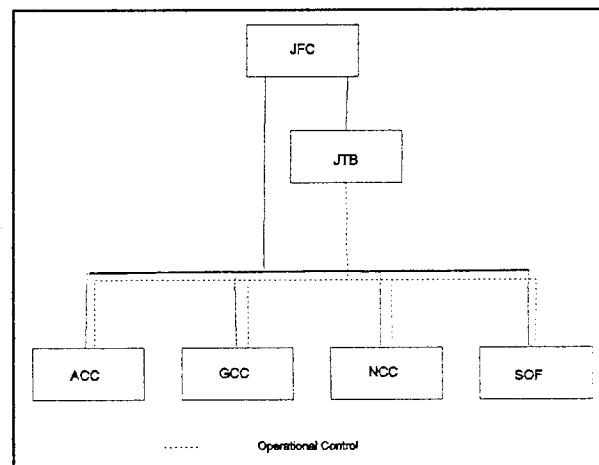


Figure 3
Joint Targeting Board Control
of the Deep Battlefield

a specific, Deep Battle control unit, increases complexity and time delays while only providing an illusion of unity of effort. The component commanders are directly responsible to both the JTB and the JFC. This will likely result in multiple source, divergent tasking. Organizational bureaucracy will be increased and exploitation of the tactical situation hindered. Additionally, centralizing joint operational control does not address the need for the individual services to be responsive to a joint environment. Having a joint group expressly designated to resolve component disagreements entices the subordinate commanders to argue more fervently for their service priorities (at the expense of supported commanders requirements) than if each subordinate commander is directly responsible for multi-service commitments.

Designating either the ACC or the GCC to control the Deep Battlefield (figures 4 and 5) enhances freedom of action for the controlling component and would streamline control for single service (or service biased) operations. However, for multi-service operations, centralized component control of the Deep Battlefield delays the subordinated commander in executing his mission, reduces

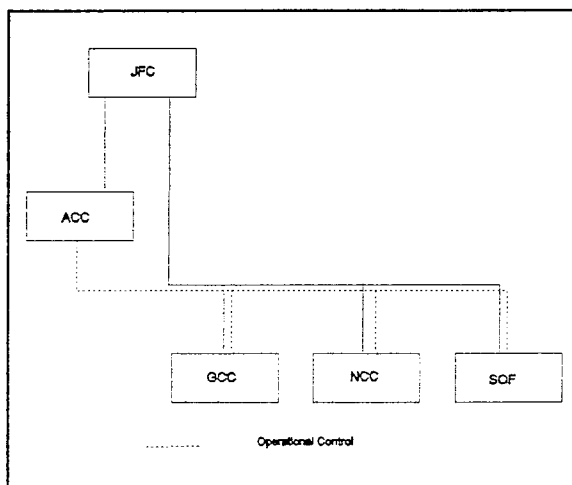


Figure 4
Air Component Control of the Deep Battlefield

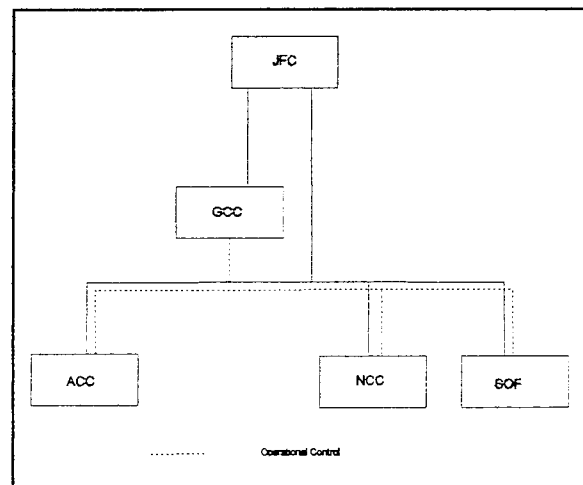


Figure 5
Ground Component Control of the Deep Battlefield

potential synergism among the joint force and hinders overall unity of effort. The army's corp level orientation would dilute the JFACC concept of centralized control of air assets--developed during the North African Campaign of World War II.¹⁹ Additionally, lack of a real-time, Deep Battle air deconfliction capability prevents adequate control.²⁰ Conversely, a fast paced, ground scheme of maneuver would bog down under ACC's centralized air force control system, counter-battery efforts would suffer, and timely interdiction of ground forces could go unfilled in preference to long term, strategic bombing efforts.²¹

To overcome the difficulties inherent in any of the centralized command schemes, a cooperative organizational architecture is required. Time sharing and space sharing of the Deep Battlefield are two methods of providing this control (figures 6 and 7).

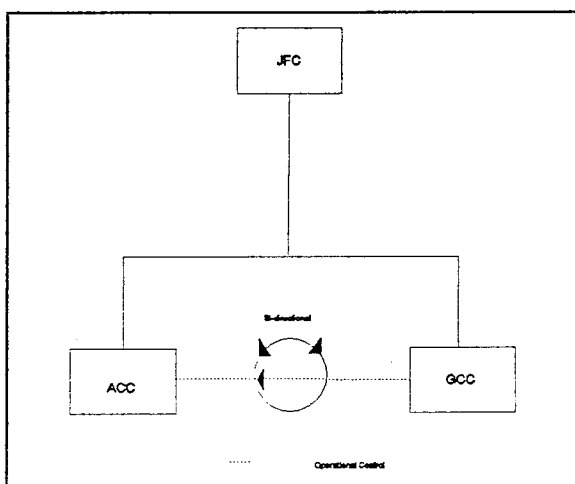


Figure 6
Time Sharing Control of the Deep Battlefield

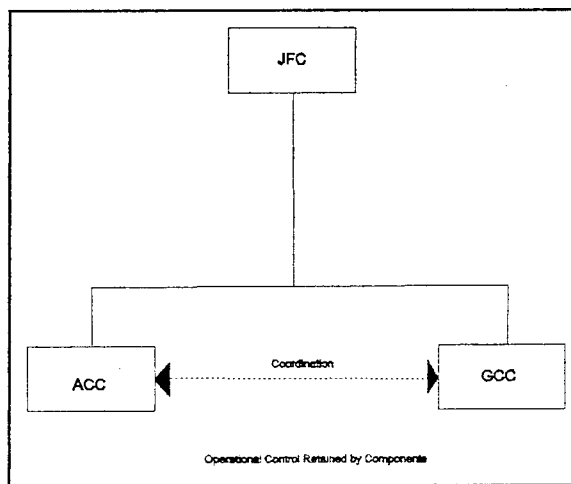


Figure 7
Task Sharing (Concurrent/Cooperative) Control

While all components have an interest in the Deep Battlefield, their commander's specific emphasis waxes and wanes with the phases of battle. The relative importance of the enemy's operational and strategic reserves, air defense network, strategic air targets, special force strong points and other targets will vary with the operational situation. Time sharing would shift control, as necessary, to

ensure the component with the greatest demand for the Deep Battlefield would retain control. While time sharing retains unity of command and optimizes efforts within set phases, it requires redundant control capabilities between components and the establishment of control transfer procedures.

Instead of a geographic separation scheme, space sharing is predicated on task orienting forces to concurrently control units in the Deep Battlefield. Force employment, flexibility and responsiveness are retained by the component commander. Force application is improved, but deconfliction requirements are increased during concurrent control. Not present are the added control levels and delayed decision making associated with centralized control or the redundancy and transitional difficulties of time sharing.

The Right Tool

Each of these control organizations can be successfully employed in the Deep Battlefield, but the JFC is obliged to select the control mechanism which has the best potential for bringing his concept of operations to fruition. The governing factor toward this goal is optimization of force application, consistent with maintaining adequate deconfliction. Concurrent control of the Deep Battlefield through space sharing holds the greatest potential for satisfying this requirement. It allows the JFC and component commanders to devote as much, or as little, attention to the Deep Battlefield, as is required, during each phase of a conflict and tailor their control to match their operational needs. Nevertheless, the target rich environment of the Deep Battlefield virtually ensures that multiple components will need to use the area simultaneously to achieve their assigned tasks. Implementing a command and control arrangement which mirrors this environment facilitates employment of forces by their respective component commanders. By retaining operational control of his own forces each component commander can fine tune their actions. He retains direct control to permit optimization of resource allocation, can conduct war according to service doctrine and improve overall efficiency. Combining this

direct command with a streamlined control pipeline, the component commander can reduce his reaction time and operate within his opponents decision loop.

Concurrent control of the Deep Battlefield permits each component to do what they do best, the way they want to do it. The ACC could continue to employ a centralized scheduling process (such as the Air Tasking Order) to service a prioritized target list, while the ground war is prosecuted based upon individual tactical commanders' initiative as guided by GCC's intentions. Similarly, GCC could rapidly react to enemy troop movements while ACC conducted air strikes against mobile strategic targets.

Concurrent control is cooperative control. Due to the expanded use of the Deep Battlefield, concurrent control requires increased coordination between components to deconflict their individual operations. However, because of the composition of the Deep Battlefield, the chance of interference is not excessive. While ground forces may operate in this region, by definition they do not do so in great numbers (or the area would be designated as part of the Near Battlefield). The area in close proximity to these ground forces, which restricts air attacks, is relatively small. All other portions of the Deep Battlefield may be attacked independently by either party or sequentially by both. However, if both components have time sensitive, high priority targets co-located next to one another (or if ACC wishes to attack terrain near the ground forces) then deconfliction is required. In these cases the JFC's guidance would dictate priorities for the employment of forces. While this would slightly constrain one of the components in the accomplishment of their assigned tasks, this process would strengthen the unity of effort toward the JFC's goals by focusing all components on his priorities. Additionally, the inter-component coordination required for deconfliction, would strengthen overall theater coordination and should facilitate joint employment of forces, including supporting and supported component arrangements.

Controlling Chaos

Command, control, communications and computer systems currently on the drawing board will assist in deconflicting the Deep Battlefield,²² but the implementation of a cooperative control system must be commenced with today's forces. Waiting for the next generation of technology will not improve our ability to wage maneuver warfare in the near term. Organizational structure, information sharing and command and control procedures have to be refined in order to improve the JFC's current ability to influence the deep battle.

Established battlefield control boundaries must be realigned to better reflect the high technology maneuver warfare concept. Assigning capricious, linear boundaries for the FLOT, FSCL and DBL does not accurately reflect the battlefield conditions or encourage synergism. The FLOT is a meandering line which bends and bulges as the battle progresses over diverse terrain. The breadth of control of ground forces is also variable depending upon their observation powers and the weapons employed. The resulting FSCL is a non-linear boundary which should not be straightened. The situation is exacerbated with the employment of air assault maneuver teams. Able to range far ahead of the FLOT, to attack and secure critical strategic points, these forces operate without any direct ground link to the main battle line. Instead of arbitrarily pushing the FSCL ahead of these pockets the boundary system must provide for the incorporation of islands of control and helicopter operating areas. Figure 8 provides a representation of a hypothetical boundary scheme of this concept.

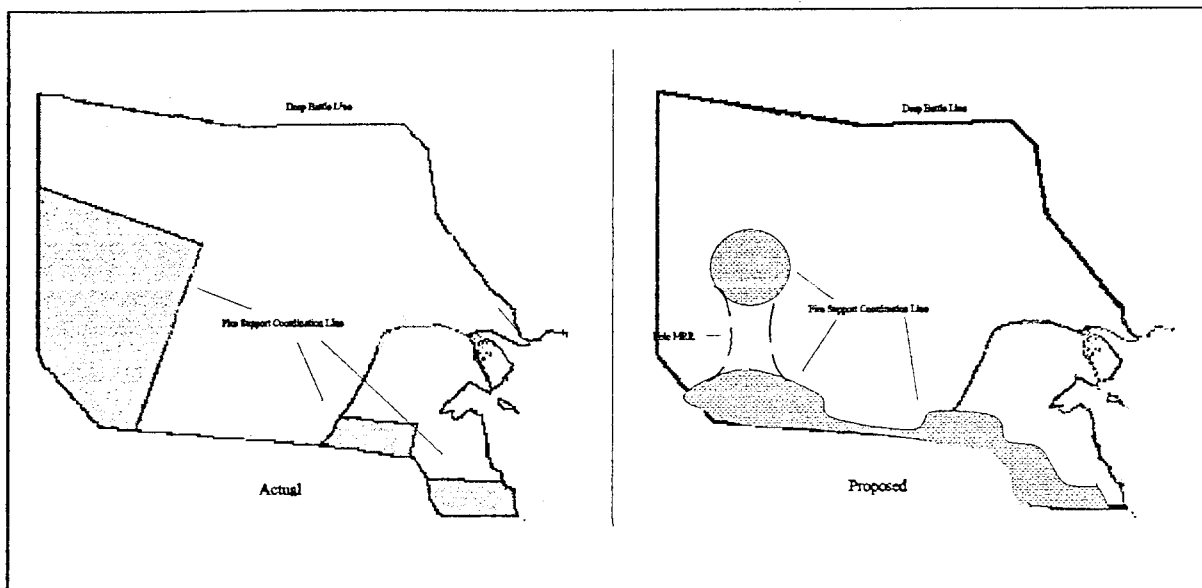


Figure 8
 Refined Boundary Scheme for the Near and Deep Battlefield,
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During the planning process the GCC (in consultation with the JFC) should identify planned phase lines and control measures to support the intended scheme of maneuver. Since deep maneuver will occur at the operational level, with corp (and echelons above corp) planning,²³ a Ground Control Order (GCO) may be developed to assist in coordination with the other components. Similar to an Air Control Order (ACO), this document would amplify the commanders intents and designate procedures for operations within the Deep Battlefield. In addition to establishing future phase lines, this order should extend some of the coordination measures already found in the Near and Rear Battlefield. Such measures include: Minimum Risk Routing/protected corridors and flight following procedures for helicopters, no attack zones to protect special forces and other compartmentalized operations, and coordination of GCC's deep fire assets.²⁴ Once developed by the GCC, the GCO would be sent to the ACC for integration with the air scheme of maneuver. The ACC target list would be reconciled with the GCO, conflicts would be resolved via conference with the GCC, the applicable portions of the Air Tasking Order (ATO) would be incorporated and the refined GCO would be promulgated to all effected parties.

To improve theater integration and help resolve GCO scheduling conflicts, the JFC must promulgate a clear vision of his intentions. Tasks must be clearly defined for both supporting and supported components, as well as, delineating a hierarchy for task prioritization.

One critical element of the Deep Battlefield, where this prioritization is needed is the relative importance of air interdiction against follow on ground forces. While joint doctrine delegates the ACC as the supported commander for interdiction efforts,²⁵ when the neutralization of enemy ground forces is considered in global terms, he is a supporting commander for the GCC. By separating interdiction of enemy ground forces from strategic interdiction of war production/sustainment facilities (and the transportation network), the JFC increases his ability to convey his intentions to all components. He transmits the relative importance he gives to: enemy forces in direct contact, reserve enemy forces and long term war fighting capabilities. He can rapidly disseminate shifts in emphasis to reflect a changing theater conditions (e.g. increasing troop interdiction when the enemy commits his strategic reserves). Toward this end, Battlefield Air Interdiction (BAI)²⁶ should be accepted in joint doctrine, incorporated as a category in the JFC's air apportionment decision, and assigned to the ACC as a supporting task.

Armed with a clear understanding of the JFC's priorities, the components can improve their individual responsiveness to the commander, but true integration requires improved coordination between the components at all levels. Expanding the Reach of Near Battlefield coordination groups (eg. Air Support Operations Center and Fire Support Elements)²⁷ to control beyond the FSCL is necessary to provide lateral flow of information, decentralize conflict resolution and improve synchronization.

These coordination groups are required in both the planning and execution phases of the Deep Battle. In the planning phase they expedite the generation of an integrated concept of operations and supporting ACO/GCO/ATO. In the execution phase they permit exploitation of tactical and operational opportunities. These control organizations and measures must be structured to retain freedom of action at the tactical level. With this objective in mind, they should facilitate command by negation to the

maximum extent possible. Flexibility must be maintained by the establishment of multi-service, rapid response procedures for such actions as SSM counter-battery and SEAD.

Finally, organizations and procedures are only as effective as the personnel who use them. Training must be established to reflect and reinforce cooperative control of the Deep Battlefield. Commanders, staffs and coordination groups must be educated regarding their command and control requirements. Then, building upon this baseline of knowledge, their skills must be practiced and refined through on the job experience. Integration starts at the top with commanders and staffs working through command post exercises in which strategic goals must be translated into tasks, delegated to subordinate commands and these commands integrated in planning. Once command relationships have been established, major field exercises must be conducted to validate those lessons learned in simulation and ensure that co-operative control measures are robust enough to survive on the Deep Battlefield.

Maintaining Control

The JFC is faced with the daunting task of realizing strategic goals through military action. He has been given exceptional discretionary powers in how he molds his forces. The national military establishment can assist him in his deliberations by standardizing a control system which optimizes task accomplishment while retaining flexibility in force allocation and employment. Cooperative control of the Deep Battlefield is the preferred system. It provides responsive, flexible, synchronized action in accordance with the JFC's vision. While the military pursues advanced information systems to expand battlefield cognizance and simplify the deconfliction requirements, they should incorporate commensurate near term improvements in organization and procedures to enhance force application. Until cooperative control is accepted into joint philosophy, control boundaries are redrawn to emulate the combat environment and Near Battlefield control measures are modified and expanded beyond the FSCL, high technology maneuver warfare will continue to be an unmastered weapon and the Deep Battlefield will be a field in chaos.

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